PATENT & TRADEMARK OFFICE
JAN 22 2008
OIPE

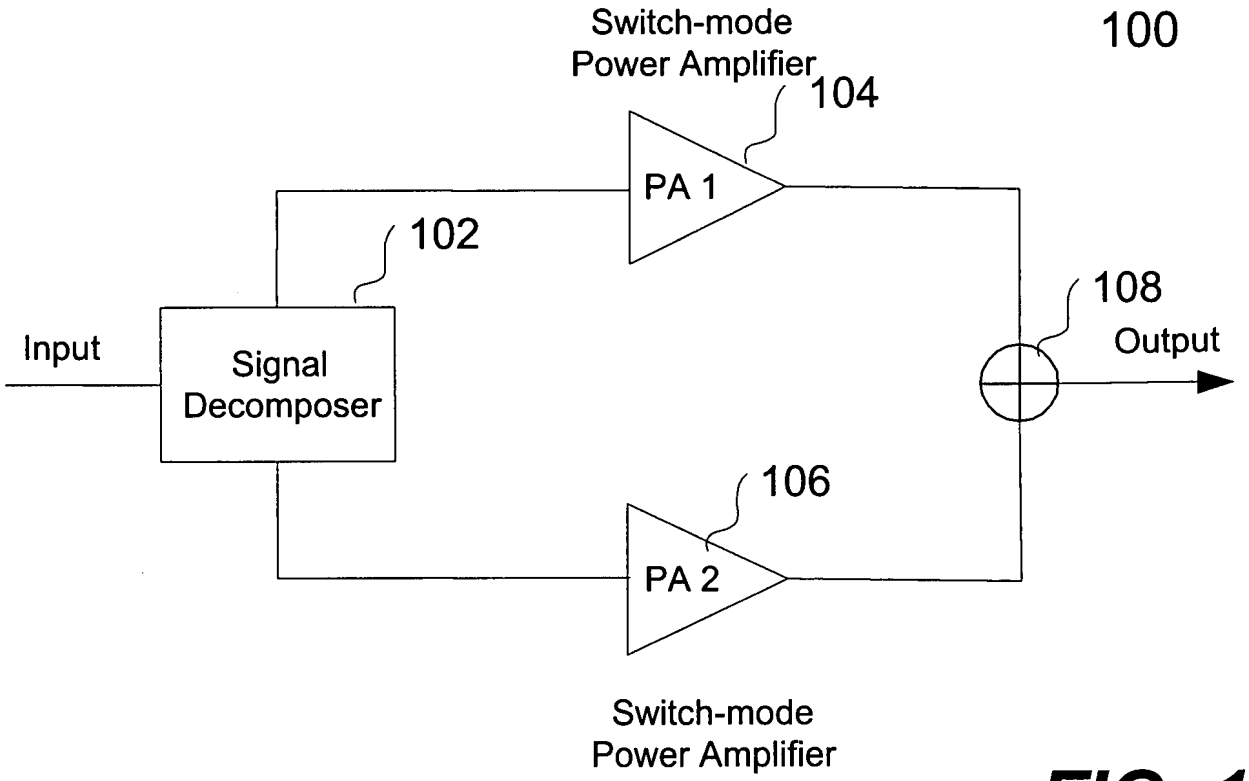


FIG. 1

Prior Art

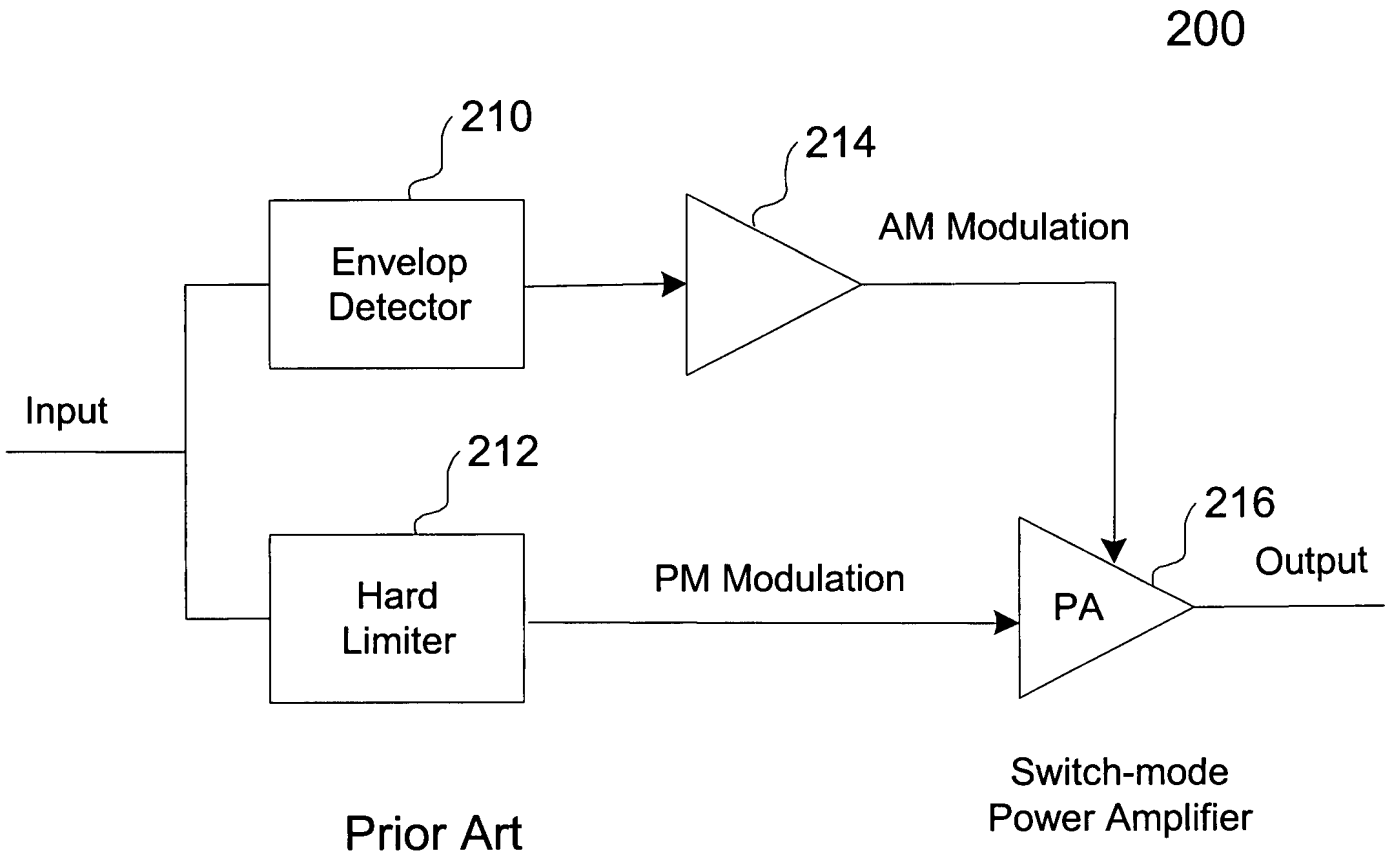
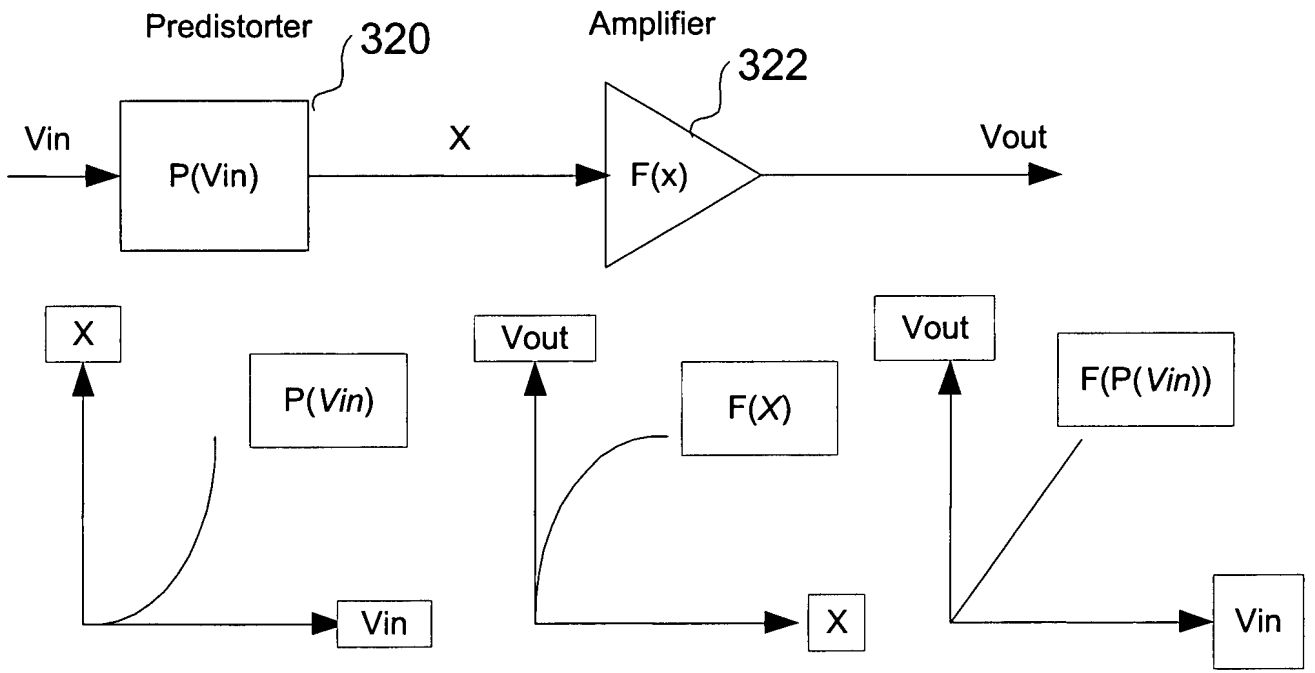

200
210
214
Envelop
Detector
AM Modulation
Input
212
216
Output
PM Modulation
Hard
Limiter
PA
Switch-mode
Power Amplifier
Prior Art

FIG. 2



Prior Art

FIG. 3

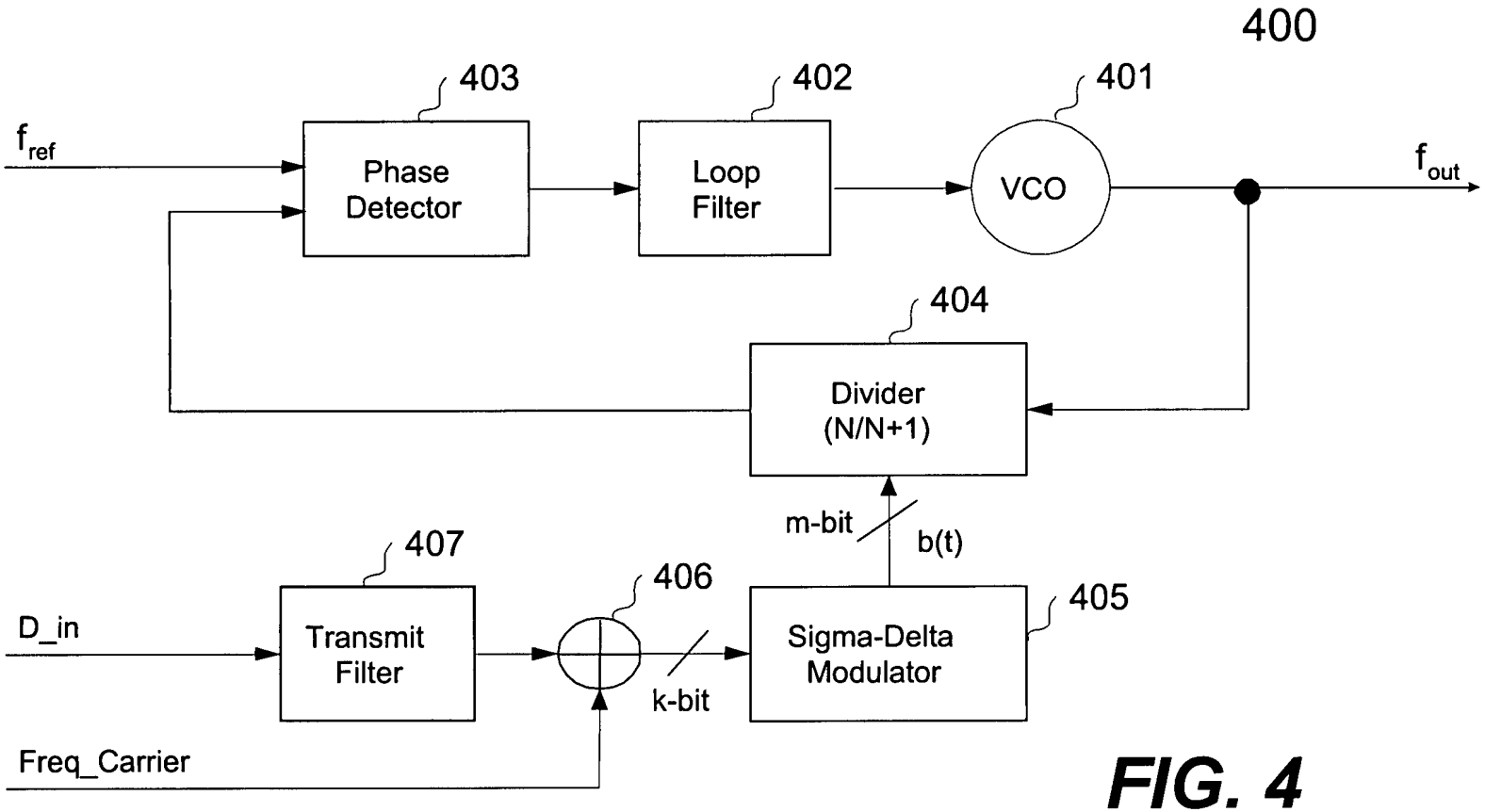


FIG. 4

Prior Art

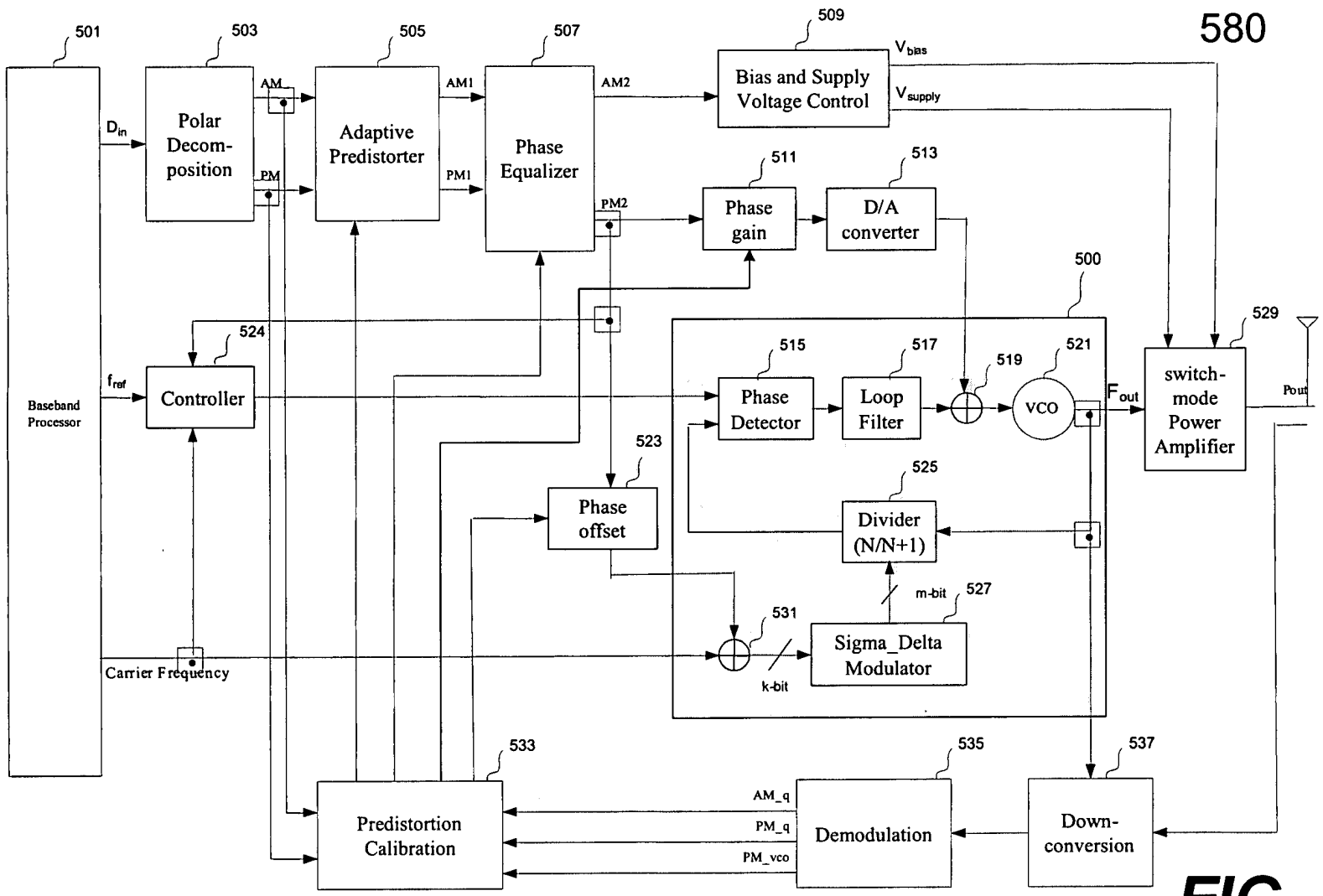

580
501
503
505
507
509
Baseband Processor
D_{in}
Polar Decom-position
AM
PM
Adaptive Predistorter
AM1
PM1
Phase Equalizer
AM2
PM2
Bias and Supply Voltage Control
V_{bias}
V_{supply}
511
513
Phase gain
D/A converter
500
524
f_{ref}
Controller
515
517
519
521
529
Phase Detector
Loop Filter
VCO
F_{out}
switch-mode Power Amplifier
Pout
523
Phase offset
525
Divider (N/N+1)
m-bit
527
531
Sigma_Delta Modulator
k-bit
Carrier Frequency
533
535
537
Predistortion Calibration
AM_q
PM_q
PM_vco
Demodulation
Down-conversion

FIG. 5

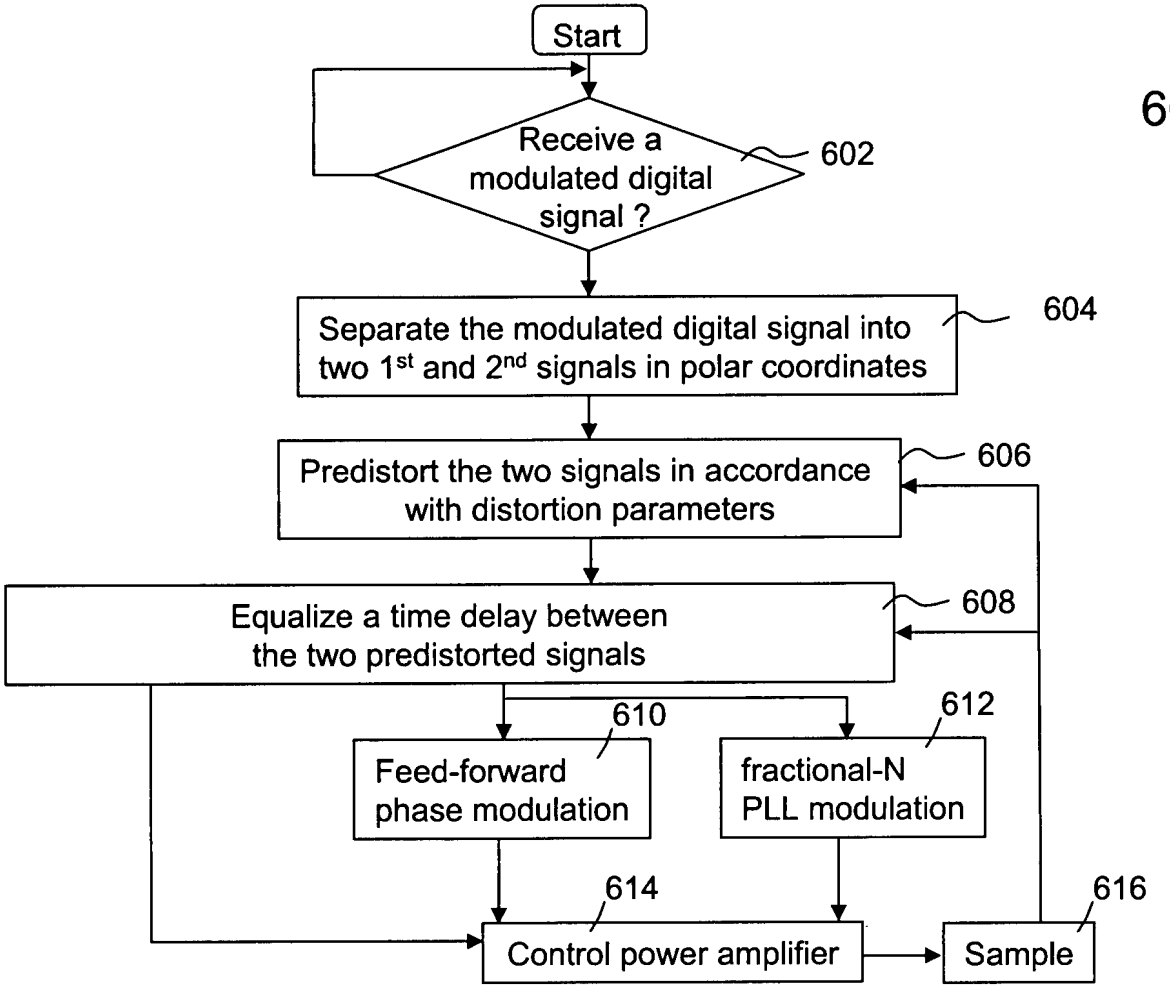

Start
Receive a modulated digital signal ?
602
600
Separate the modulated digital signal into two 1st and 2nd signals in polar coordinates
604
Predistort the two signals in accordance with distortion parameters
606
Equalize a time delay between the two predistorted signals
608
610
612
Feed-forward phase modulation
fractional-N PLL modulation
614
616
Control power amplifier
Sample

FIG. 6